AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the Application.

Listing of Claims:

Claims 1-31 (Cancelled)

32. (New) A method for determining and presenting the likelihood a person has a mutated form of a gene, the method comprising:

receiving a request from a clinician for genetic test results for a gene for a person;

querying a first database to determine if the person has one or more genetic test results for the gene in response to the request by the clinician;

obtaining the mode of inheritance for the gene if the person does not have one or more genetic test results for the gene;

querying a second database to determine whether at least one family member of the person within the mode of inheritance has one or more genetic test results for the gene;

utilizing the one or more genetic test results of the at least one family member to calculate a likelihood the person has a mutated form of the gene if at least one of the family members has genetic test results for the gene; and

presenting the calculated likelihood the person has a mutated form of the gene to the clinician.

33. (New) The method of claim 32, wherein the second database comprises an electronic medical record for each family member stored within a comprehensive healthcare system.

34. (New) The method of claim 32, further comprising:

inquiring whether at least one family member of the person within the mode of inheritance has one or more genetic markers related to the gene.

35. (New) The method of claim 34, further comprising:

utilizing the one or more genetic markers of at least one family member of the person to calculate the likelihood the person has a mutated form of the gene.

36. (New) The method of claim 32, wherein the instructions for the method are embodied on one or more computer readable media.

37. (New) The method of claim 32, further comprising:

determining whether the mutated form of the gene is a gene variant indicative of an atypical event.

38. (New) The method of claim 37, wherein if the mutated form of the gene is a gene variant indicative of an atypical event, presenting an alert to a user.

39. (New) The method of claim 32, wherein the mode of inheritance is selected from one of a mitochondrial mode of inheritance, an x-linked mode of inheritance, a mendelian mode of inheritance, and a y-linked mode of inheritance.

40. (New) The method of claim 32 wherein said first and second databases are a common database.

41. (New) A computer system for determining and presenting the likelihood a person has a mutated form of a gene, the computer system comprising:

a receiving module for receiving a request from a clinician for genetic test results for a gene for a person; and

a first querying module for querying a first database to determine if the person has one or more genetic test results for the gene in response to the request by the clinician;

an obtaining module for obtaining the mode of inheritance for the gene if the person does not have one or more genetic test results for the gene;

a second querying module for querying a second database to determine whether at least one family member of the person within the mode of inheritance has one or more genetic test results for the gene;

a utilizing module for utilizing the one or more genetic test results of the at least one family member to calculate a likelihood the person has a mutated form of the gene if at least one of the family members has genetic test results for the gene; and

a presenting module for presenting the calculated likelihood the person has a mutated form of the gene to the clinician.

42. (New) The method of claim 41, wherein the second database comprises an electronic medical record for each family member stored within a comprehensive healthcare system.

43. (New) The system of claim 41, wherein the second querying module determines the mode of inheritance has one or more genetic markers related to the gene.

44. (New) The system of claim 43, wherein the utilizing module utilizing the one or more genetic markers of at least one family member of the person to calculate the likelihood the person has a mutated form of the gene.

45. (New) The method of claim 41, wherein the first database comprises an electronic medical record for the person.

46. (New) The system of claim 41, further comprising:

a determining module for determining whether the mutated form of the gene is a gene variant indicative of an atypical event.

47. (New) The system of claim 46, wherein if the mutated form of the gene is a gene variant indicative of an atypical event, the presenting module presents an alert to a user.

48. (New) The method of claim 41, wherein the mode of inheritance is selected from one of a mitochondrial mode of inheritance, an x-linked mode of inheritance, a mendelian mode of inheritance, and a y-linked mode of inheritance.

49. (New) A method for determining and presenting the likelihood a person has a mutated form of a gene, the method comprising:

querying a database to determine if the person has one or more genetic test results for the gene in response to an order for medication for a person;

obtaining the mode of inheritance for the gene if the person does not have one or more genetic test results for the gene;

querying a database to determine whether at least one family member of the person within the mode of inheritance has one or more genetic test results for the gene;

utilizing the one or more genetic test results of the at least one family member to calculate a likelihood the person has a mutated form of the gene if at least one of the family members has genetic test results for the gene; and

presenting the calculated likelihood the person has a mutated form of the gene to a clinician.

50. (New) The method of claim 49, wherein the instructions for the method are embodied on one or more computer readable media.

51. (New) The method of claim 49, further comprising:

determining whether the mutated form of the gene is a gene variant indicative of an atypical event.

52. (New) The method of claim 51, wherein if the mutated form of the gene is a gene variant indicative of an atypical event, presenting an alert to a user.